AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-60020 Exemptions. (1) **The following are exempt from this chapter:**

(a) Explosives or blasting agents transported by railroad, water, highway, or air under the jurisdiction of the Federal Department of Transportation (DOT), the Washington state utilities and transportation commission, and the Washington state patrol.

(b) Laboratories of schools, colleges, and similar institutions if confined to the purpose of instruction or research and if the quantity does not exceed one pound.

(c) Explosives in the forms prescribed by the official United States Pharmacopoeia.

(d) The transportation, storage, and use of explosives or blasting agents in the normal and emergency operations of ((~~federal agencies and departments including the regular United States military departments on military reservations and~~)):

- The United States agencies and departments including the regular United States military departments on military reservations
- Arsenals, navy yards, depots, or other establishments owned by, operated by, or on behalf of, the United States
- The duly authorized militia of any state ((~~or territory~~))
- The emergency operations of any state department or agency, any police, or any municipality or county

((~~- Any police~~

~~- Any municipality or county~~))

(e) A hazardous devices technician when they are carrying out:

- Normal and emergency operations
- Handling evidence
- Operating and maintaining a specially designed emergency response vehicle that carries no more than ten pounds of explosive materials
- When conducting training and whose employer possesses the minimum safety equipment prescribed by the Federal Bureau of Investigation (FBI) for hazardous devices work

Note: A hazardous devices technician is a person who is a graduate of the FBI Hazardous Devices School and who is employed by a state, county, or municipality.

(f) The importation, sale, possession, and use of fireworks, signaling devices, flares, fuses, and torpedoes.

(g) The transportation, storage, and use of explosives or

blasting agents in the normal and emergency avalanche control procedures used by trained and licensed ski area operator personnel. However, the storage, transportation, and use of explosive and blasting agents for such use must meet the requirements in chapter 296-59 WAC, Safety standards for ski operations.

Note: The purpose of this chapter is to protect the public by enabling ski area operators to exercise appropriate avalanche control measures. The legislature finds that avalanche control is of vital importance to safety in ski areas and that the provisions of the Washington State Explosives Act contain restrictions, which do not reflect special needs for the use of explosives as a means of clearing an area of serious avalanche risks. This act recognizes these needs while providing for a system of regulations designed to make sure that the use of explosives for avalanche control conforms to fundamental safety requirements.

(h) Any violation under this chapter if any existing ordinance of any city, municipality, or county is more stringent.

(2) **Noncommercial military explosives.** Storage, handling, and use of noncommercial military explosives are exempt from this chapter while they are under the control of the United States government or military authorities.

(3) **Import, sale, possession, or use of:**

- Consumer fireworks
- Signaling devices
- Flares
- Fuses
- Torpedoes

(4) **((~~Class C~~)) Consumer fireworks.** Fireworks classified as ((~~Class C~~)) Division 1.4 explosives by U.S. DOT ((~~(Division 1.4)~~)) and regulated through the State fireworks law (chapter 70.77 RCW) and the fireworks administrative code (chapter 212-17 WAC) by the Washington state fire marshal.

Note: Consumer fireworks are classified as fireworks UN0336 and UN0337 by U.S. DOT (49 CFR 72.101).

(5) **Partial exemption--((~~Class A and B~~)) Division 1.1, 1.2, or 1.3 display fireworks.** Display fireworks are fireworks classified as ((~~Class A or B~~)) Division 1.1, 1.2, or 1.3 explosives by US DOT ((~~(International Designations 1.1, 1.2, or 1.3)~~)). Users of ((~~Class A and B~~)) Division 1.1, 1.2, or 1.3 display fireworks must comply with all storage or storage related requirements (for example, licensing, construction, and use) of this chapter.

Note: Display fireworks are classified as fireworks UN0333, UN0334, or UN0335 by U.S. DOT (49 CFR 172.101).

(6) **Conditional exemption small arms explosive materials.** Public consumers possessing and using:

- Black powder, under five pounds
- Smokeless powder, under fifty pounds
- Small arms ammunition
- Small arms ammunition primers

– Unless these materials are possessed or used illegally or for a purpose inconsistent with small arms use.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-60130 Definitions. American Table of Distances means the American Table of Distances for Storage of Explosives as revised and approved by Institute of the Makers of Explosives (IME).

Approved storage facility means a facility for the storage of explosive materials which is in compliance with the following chapter:

- Storage licensing (WAC 296-52-660)
- Storage of explosive materials (WAC 296-52-690)
- Magazine construction (WAC 296-52-700).

Attend means the physical presence of an authorized person who stays in view of the explosives.

Authorized, approved, or approval means authorized, approved, or approval by:

- The department
- Any other approving agency
- An individual as specified in this chapter.

Authorized agent means a person delegated by a licensed purchaser, who possesses a basic knowledge of explosives handling safety, to order and receive explosives on the purchaser's behalf.

Authorized agent list means a current list of agents the purchaser has authorized to order or receive explosives on their behalf.

Authorized person means a person approved or assigned by an employer, owner, or licensee to perform a specific type of duty or be at a specific location at the job site.

Barricades

- **Barricade** means effectively screening a building containing explosives by means of a natural or artificial barrier from a magazine, another building, a railway, or highway.
- **Artificial barricade** means a barricade of such height that a straight line from the top of any sidewall of the building containing explosives to the eave line of any magazine or other building or to a point twelve feet above the center of a railway or highway shall pass through such barrier, an artificial mound or properly revetted wall of earth with a minimum thickness of three feet.
- **Natural barricade** means any natural hill, mound, wall, or barrier composed of earth, rock, or other solid material at

least three feet thick.

BATF means the Bureau of Alcohol, Tobacco, and Firearms.

Blast area means the area of a blast that is effected by:

- Flying rock missiles
- Gases
- Concussion.

Blast pattern means the plan of the drill holes laid out and a display of the burden distance, spacing distance, and their relationship to each other.

Blast site means the area where explosive material is handled during loading and fifty feet in all directions from loaded blast holes or holes to be loaded.

Blaster means a person trained and experienced in the use of explosives and licensed by the department.

Blaster in charge means a licensed blaster who is:

- Fully qualified, by means of training and experience in explosives use
- Adequately trained, experienced, and capable of recognizing hazardous conditions throughout the blast area
- In charge of:

– The blast process

– All aspects of explosives and blasting agent storage, handling, and use as recommended by the manufacturer and as required by this chapter

- In a position of authority:

– To take prompt corrective action in all areas of the blast operation

– Over all other blasters at the blast area

Blasting agent means any material or mixture consisting of a fuel and oxidizer:

- That is intended for blasting
- ((~~That is~~)) Not otherwise ((~~classified~~)) defined as an explosive

((~~- Where none of the ingredients are classified as an explosive,~~

~~– Provided, the finished product, as mixed and packaged for use or shipment, cannot be detonated when unconfined by means of a Number 8 test detonator~~))

- If the finished product, as mixed for use or shipment, cannot be detonated by means of a number 8 test blasting cap when unconfined

– A number 8 test blasting cap is one containing two grams of a mixture of eighty percent mercury fulminate and twenty percent potassium chlorate, or a blasting cap of equivalent strength. An equivalent strength cap comprises 0.40-0.45 grams of PETN base charge pressed in an aluminum shell with bottom thickness not to exceed 0.03 of an inch, to a specific gravity of not less than 1.4 g/cc., and primed with standard weights of

primer depending on the manufacturer

Blockholing means the breaking of boulders by firing a charge of explosives that has been loaded in a drill hole.

Competent person means a person who:

- Is capable of identifying existing hazardous and the forecasting of hazards of working conditions which might be unsanitary or dangerous to personnel or property
- Has authorization to take prompt corrective action to eliminate such hazards.

Consumer fireworks means:

- Any small firework device:

– Designed to produce visible effects by combustion

– That must comply with the construction, chemical composition, and labeling regulations of the U.S. Consumer Product Safety Commission (Title 16 CFR, Parts 1500 and 1507),

- A small device designed to produce audible effects which include, but are not limited to:

– Whistling devices

– Ground devices containing 50 mg or less of explosive materials

– Aerial devices containing 130 mg or less of explosive materials

Note: Fused set pieces containing components, which, together, exceed 50 mg of salute powder are not included.

Conveyance means any unit used for transporting explosives or blasting agents, including, but not limited to:

- Trucks
- Trailers
- Rail cars
- Barges
- Vessels.

Day box means a box which:

- Is a temporary storage facility for storage of explosive materials
- Is not approved for unattended storage of explosives
- May be used at the worksite during working hours to store explosive materials, provided the day box is:

– Constructed as required (WAC 296-52-70065, Explosives day box),

– Marked with the word "explosives"

– Used in a manner that safely separates detonators from other explosives

– Guarded at all times against theft

Dealer means any person who purchases explosives or blasting agents for the sole purpose of resale and not for use or consumption.

Detonating cord means a round flexible cord containing a center core of high explosive and used to initiate other explosives.

Detonator means any device containing any initiating or primary explosive that is used for initiating detonation and includes, but is not limited to:

- Electric detonators of instantaneous and delay types
- Detonators for use with safety fuses, detonating cord delay connectors, and nonelectric instantaneous delay detonators which use detonating cord, shock tube, or any other replacement for electric leg wires.

Discharge hose means a hose with an electrical resistance high enough to limit the flow of stray electric currents to safe levels, but not high enough to prevent drainage of static electric charges to the ground. Hose not more than 2 megohms resistance over its entire length and of not less than 5,000 ohms per foot meets the requirement.

Display fireworks means large fireworks:

- Designed primarily to produce visible or audible effects by combustion, deflagration, or detonation, and include, but are not limited to:
  - Salutes containing more than 2 grains (130 mg) of explosive materials
  - Aerial shells containing more than 40 grams of pyrotechnic compositions
  - Other display pieces, which exceed the limits of explosive materials for classification as "consumer fireworks"
  - Fused set pieces containing components, which together exceed 50 mg of salute powder

Electric detonator means a blasting detonator designed for and capable of detonation by means of electric current.

Electric blasting circuitry consists of these items:

- **Bus wire.** An expendable wire used in parallel or series, or in parallel circuits, which are connected to the leg wires of electric detonators.
- **Connecting wire.** An insulated expendable wire used between electric detonators and the leading wires or between the bus wire and the leading wires.
- **Leading wire.** An insulated wire used between the electric power source and the electric detonator circuit.
- **Permanent blasting wire.** A permanently mounted insulated wire used between the electric power source and the electric detonator circuit.

Electric delay detonators means detonators designed to detonate at a predetermined time after energy is applied to the ignition system.

Emulsion means an explosive material containing:

- Substantial amounts of oxidizer dissolved in water droplets, surrounded by an immiscible fuel
- Droplets of an immiscible fuel surrounded by water containing substantial amounts of oxidizer.

Explosives means:

✎ Any chemical compound or mechanical mixture:

– Commonly intended or used for the purpose of producing an explosion

– That contains any oxidizing and combustible units or other ingredients in proportions, quantities or packing that an ignition by fire, friction, concussion, percussion, or detonation of any part of the compound or mixture may cause sudden generation of highly heated gases resulting in gaseous pressures capable of producing destructive effects on contiguous objects or of destroying life or limb

✎ All material classified as ((~~Class A, Class B, and Class C~~)) Division 1.1, 1.2, 1.3, 1.4, 1.5, or 1.6 explosives by U.S. DOT

✎ For the purposes of public consumer use, the following are not considered explosives unless they are possessed or used for a purpose inconsistent with small arms use or other legal purposes:

– Small arms ammunition

– Small arms ammunition primers

– Smokeless powder, not exceeding fifty pounds

– Black powder, not exceeding five pounds

Explosive actuated power devices means any tool or special mechanized device, which is activated by explosives and does not include propellant actuated power devices.

Explosives classifications. Explosives classifications include, but are not limited to:

✎ ((~~Class A (Division 1.1)~~)) Division 1.1 and Division 1.2 explosives (((~~possessing~~)) possess mass explosion or detonating hazard):

– Dynamite

– Nitroglycerin

– Picric acid

– Lead azide

– Fulminate of mercury

– Black powder (exceeding 5 pounds)

– Detonators (in quantities of 1,001 or more)

– Detonating primers

✎ ((~~Class B (Division 1.2 and~~)) Division 1.3((~~)~~)) explosives (((~~possessing~~)) possess a minor blast hazard, a minor projection hazard, or a flammable hazard):

– Propellant explosives

– Smokeless ((~~propellants~~)) powder (exceeding fifty pounds)

✎ ((~~Class C (Division 1.4) explosives.~~

~~– Certain types of manufactured articles, which contain Class A and/or Class B explosives as compounds (but in restricted quantities)~~

~~– Detonators (in quantities of 1,000 or less)~~)) Division

1.4 explosives:

– Explosives that present a minor explosion hazard

– Includes detonators that will not mass detonate in quantities of 1,000 or less

✎ Division 1.5 explosives:

– Explosives with a mass explosion hazard but are so insensitive that there is little probability of initiation

– ANFO and most other blasting agents are in this division

✎ Division 1.6 explosives:

– Explosives that are extremely insensitive and do not have a mass explosion hazard

Explosives exemption. The exemption for small arms ammunition, small arms ammunition primers, smokeless powder, not exceeding fifty pounds, and black powder, not exceeding five pounds:

✎ Applies to public consumer use only

✎ Does not apply to the employer employee relationship covered under the Washington Industrial Safety and Health Act.

Explosives international markings.

✎ The department will accept U.S. DOT and/or BATF international identification markings on explosives and/or explosives containers or packaging

✎ This exception is under the authority of RCW 70.74.020(3) and in lieu of Washington state designated markings (as defined by RCW 70.74.010(4) ((~~(Class A, B, or C)~~)) (Division 1.1, 1.2, and 1.3) and required by RCW 70.74.300).

Explosives manufacturing building means any building or structure, except magazines:

✎ Containing explosives where the manufacture of explosives, or any processing involving explosives, is conducted

✎ Where explosives are used as a component part or ingredient in the manufacture of any article or device.

Explosives manufacturing plant means all lands with buildings used:

✎ In connection with the manufacturing or processing of explosives

✎ For any process involving explosives

✎ For the storage of explosives

✎ To manufacture any article or device where explosives are used as a component part or ingredient in the article or device.

Fireworks means any composition or device:

✎ Designed to produce a visible or an audible effect by combustion, deflagration, or detonation

✎ Which meets the definition of "consumer fireworks" or "display fireworks."

Forbidden or not acceptable explosives means explosives which are forbidden or not acceptable for transportation by common carriers by rail freight, rail express, highway, or water

in accordance with the regulations of the Federal Department of Transportation (DOT).

Fuel means a substance, which may react with oxygen to produce combustion.

Fuse (safety). See "safety fuse."

Fuse lighters means special devices used for the purpose of igniting safety fuses.

Handler means any individual who handles explosives or blasting agents for the purpose of transporting, moving, or assisting a licensed blaster in loading, firing, blasting, or disposal.

Note: This does not include employees of a licensed manufacturer engaged in manufacturing process, drivers of common carriers, or contract haulers.

Hand loader means any person who engages in the noncommercial assembly of small arms ammunition for personal use; specifically, any person who installs new primers, powder, and projectiles into cartridge cases.

Highway means roads, which are regularly and openly traveled by the general public and includes public streets, alleys, roads, or privately financed, constructed, or maintained roads.

Improvised device means a device, which is:

- Fabricated with explosives
- Fabricated with destructive, lethal, noxious, pyrotechnic, or incendiary chemicals, and designed, or has the capacity to disfigure, destroy, distract, and harass.

Inhabited building means:

- A building which is regularly occupied, in whole or in part, as a habitat for human beings
- Any church, schoolhouse, railroad station, store, or other building where people assemble.

Note: This does not mean any building or structure occupied in connection with the manufacture, transportation, storage, or use of explosives.

Low explosives means explosive materials, which can be caused to deflagrate when, confined. This includes:

- Black powder, safety fuses, igniters, igniter cords, fuse lighters, and display fireworks defined as ((~~Class B~~)) Division 1.2 or Division 1.3 explosives by U.S. DOT (49 CFR Part 173).

Note: This does not apply to bulk salutes.

Magazine means any building, structure, or container approved for storage of explosive materials.

Note: This does not apply to an explosive manufacturing building.

Manufacturer means any person, partnership, firm, company, or corporation who manufactures explosives or blasting agents, or use any process involving explosives as a component part in the manufacture of any device, article, or product.

EXEMPTIONS: The following exemptions are restricted to materials and components, which are not classified (by U.S. D0T) as explosives until after they are mixed. With this restriction, the definition of manufacturer *does not* include:

- Inserting a detonator into a cast booster or a stick of high explosive product to make a primer for loading into a blast hole
- The act of mixing on the blast site, either by hand or by mechanical apparatus, binary components, ammonium nitrate, fuel oil, and/or emulsion products to create explosives for immediate down blast hole delivery.

Misfire means the complete or partial failure of an explosive charge to explode as planned.

Mudcap (also known as bulldozing and ((~~bodying~~)) dobying) means covering the required number of cartridges that have been placed on top of a boulder with a three or four-inch layer of mud, which is free from rocks or other material that could cause a missile hazard.

Nonelectric delay detonator means a detonator with an integral delay element in conjunction with and capable of being detonated by a:

- Detonation impulse
- Signal from miniaturized detonating cord
- Shock tube.

Oxidizer means a substance that yields oxygen readily to stimulate the combustion of organic matter or other fuel.

Permanent magazines means magazines that:

- Are fastened to a foundation
- Do not exceed permanent magazine capacity limits (RCW 70.74.040)
- Are approved and licensed
- Are left unattended.

Person means any individual, firm, partnership, corporation, company, association, person or joint stock association or trustee, receiver, assignee, or personal representative of that entity.

Person responsible, for an explosives magazine, means:

- The person legally responsible for a magazine that actually uses the magazine
- The person is responsible for the proper storage, protection, and removal of explosives, and may be the owner lessee, or authorized operator.

Portable (field) magazines means magazines that are:

- Designed to be unattended
- Not permanently fastened to a foundation
- Constructed or secured to make sure they cannot be lifted, carried, or removed easily by unauthorized persons
- Limited to the capacity of explosives required for efficient blasting operation
- Approved and licensed.

Possess means the physical possession of explosives in one's hand, vehicle, magazine, or building.

Primary blasting means the blasting operation that dislodged the original rock formation from its natural location.

Primer means a unit, package, cartridge, or container of explosives inserted into or attached to a detonator or detonating cord to initiate other explosives or blasting agents.

Propellant actuated power device means any tool, special mechanized device, or gas generator system, which is actuated by

a propellant and releases and directs work through a propellant charge.

Public utility transmission systems means:

- Any publicly owned systems regulated by:
- The utilities and transportation commission
- Municipalities
- Other public regulatory agencies, which include:
- Power transmission lines over 10 kV, telephone cables, or microwave transmission systems
- Buried or exposed pipelines carrying water, natural gas, petroleum, or crude oil or refined products and chemicals

Purchaser means any person who buys, accepts, or receives explosives or blasting agents.

Pyrotechnics, commonly referred to as fireworks, means any combustible or explosive compositions or manufactured articles designed and prepared for the purpose of producing audible or visible effects.

Qualified person means a person who has successfully demonstrated the ability to solve or resolve problems relating to explosives, explosives work, or explosives projects by:

- Possession of a recognized degree or certificate
- Professional standing
- Extensive knowledge, training, and experience.

Railroad means any type of railroad equipment that carries passengers for hire.

Safety fuse (for firing detonators) means a flexible cord containing an internal burning medium by which fire is conveyed at a continuous and uniform rate.

Secondary blasting means using explosives, mudcapping, or blockholing to reduce oversize material to the dimension required for handling.

Shock tube means a small diameter plastic tube:

- Used for initiating detonators
- That contains a limited amount of reactive material so energy, transmitted through the tube by means of a detonation wave, is guided through and confined within the walls of the tube.

Small arms ammunition means any shotgun, rifle, pistol, or revolver cartridge, and cartridges for propellant actuated power devices and industrial guns.

Note: This does not mean military type ammunition containing explosive bursting incendiary, tracer, spotting, or pyrotechnic projectiles.

Small arms ammunition primers means small percussion sensitive explosive charges encased in a detonator or capsule used to ignite propellant power or percussion detonators used in muzzle loaders.

Smokeless ((~~propellants~~)) <u>powder</u> means solid chemicals or solid chemical mixtures that function by rapid combustion.

Special industrial explosive devices means explosive

actuated power devices and propellant-actuated power devices.

Special industrial explosives materials means shaped materials and sheet forms and various other extrusions, pellets, and packages of high explosives, which include:

- Dynamite
- Trinitrotoluene (TNT)
- Pentaerythritol tetranitrate (PETN)
- Hexahydro-1, 3, 5-trinitro-s-triazine (RDX)
- Other similar compounds used for high-energy-rate forming, expanding, and shaping in metal fabrication, and for dismemberment and quick reduction of scrap metal.

Springing means the creation of a pocket in the bottom of a drill hole by the use of a moderate quantity of explosives so that larger quantities of explosives may be inserted.

Sprung hole means a drilled hole that has been enlarged by a moderate quantity of explosives to allow for larger quantities of explosives to be inserted into the drill hole.

Stemming means a suitable inert incombustible material or device used to confine or separate explosives in a drill hole or cover explosives in mudcapping.

Trailer means semi-trailers or full trailers, as defined by U.S. DOT, which are:

- Built for explosives
- Loaded with explosives
- Operated in accordance with U.S. DOT regulations.

U.S. DOT means the United States Department of Transportation.

Vehicle means any car, truck, tractor, semi-trailer, full trailer, or other conveyance used for the transportation of freight.

Water-gels or emulsion explosives. These explosives:

- Comprise a wide variety of materials used for blasting. Two broad classes of water-gels are those which:

– Are sensitized by material classed as an explosive, such as TNT or smokeless powder

– Contain no ingredient classified as an explosive which are sensitized with metals, such as aluminum, or other fuels

- Contain substantial proportions of water and high proportions of ammonium nitrate, some ammonium nitrate is in the solution in the water, and may be mixed at an explosives plant, or the blast site immediately before delivery into the drill hole.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-67065 Vibration and damage control. (1) Ground vibration - maximum limits.

Either Table 8-A or Table 8-B can be used to determine the maximum limits of ground vibration for any dwelling, public building, school church, commercial site, cofferdams, piers, underwater structures, or institutional building nearby the blasting site. The methods used for monitoring vibration and calculating frequency must be included in the blast plan.

Table 8-A

PEAK PARTICLE VELOCITY LIMITS

Distance from blasting site	**Maximum allowable peak particle velocity[1]**
0 to 300 ft (91.4 m)	1.25 in/sec (31.75 mm/sec)
301 to 5000 ft (91.5 m to 1524 m)	1.00 in/sec (25.4 mm/sec)
5001 ft (1525 m) and beyond	0.75 in/sec (19 mm/sec)

[1] Peak particle velocity must be measured in three mutually perpendicular directions and the maximum allowable limits must apply to each of these measurements.

(a) Frequency versus particle velocity graphics. In lieu of Table 8-A, a blasting operation has the option to use the graphs shown in Figure 8a or 8b to limit peak particle velocity based upon the frequency of the blast vibration. If either of the graphs in Figure 8a or 8b is used to limit vibration levels, the methods used for monitoring vibration and calculating frequency must be included in the blast plan.

Place illustration here.

Place illustration here.

(b) Scaled distance equations. Unless a blasting operation uses a seismograph to monitor a blast to assure compliance with Table 8-A or Figures 9a or 8b, the operation must comply with the scaled distance equations shown in Table 8-B.

Table 8-B

SCALED-DISTANCE EQUATIONS

Distance from Blasting Site	Scaled Distance Equation

0 to 300 ft (91.4 m)	W (lbs) = (d (ft)/50)2 or W (kg) = (d (m)/22.6)2
301 to 5000 ft (92 m to 1524 m)	W (lbs) = (d (ft)/55)((~~Z~~))2 or W (kg) = (d (m)/24.9)2
5001 ft (1524 m) and beyond	W (lbs) = (d (ft)/65) or W (kg) = (d (m)/29.4)((~~Z~~))2

Key:

W = The maximum weight of explosives in pounds (or kilograms) that can be detonated per delay interval of 8 milliseconds or greater.
d = The distance in feet (or meters) from the blast to the nearest dwelling, public building, school, church, commercial, or institutional building not owned, leased, or contracted by the blasting operation, or on property where the owner has not given a written waiver to the blasting operation.

Note: To convert English Units of scaled distances (ft/lb^2) to metric units (m/kg^2) divide by a factor of 2.21.

(2) **Air blast - Maximum limits.** Air blast must not exceed the maximum limits listed in Table 8-C. Use Table 8-C to determine maximum air blast limits at any dwelling, public building, school, church, commercial, or institutional building not owned, leased, contracted, or on the property where the owner has not provided a written waiver to the blasting operation.

Table 8-C
AIR-BLAST LIMITS

Lower Frequency of Measuring System in Hz (+ or - 3 decibels)		**Measurement Level in Decibels**
0.1 Hz or Lower	Flat Response	134 Peak
2 Hz or Lower	Flat Response	133 Peak
6 Hz or Lower	Flat Response	129 Peak
C-Weighted	Slow Response	105 Peak dBC

(3) Flyrock outside the blast area:

(a) **Uncontrolled flyrock.** Flyrock traveling in the air or along the ground cannot be cast from the blast area in an uncontrolled manner, which could result in personal injury or property damage. Uncontrolled flyrock (airborne or along the ground), that could cause personal injury or property damage, is not allowed from the blast area.

(b) **Contract or written waiver.** Flyrock cannot be propelled from the blast area onto property where the blasting operation has not contracted or received a written waiver from the owner.

(c) **Use of protective material.** When blasting in congested areas or close to a structure, railway, highway, or any other installation that could be damaged, the blast must be covered, before firing, with a mat or other protective material that will

prevent fragments from being thrown.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-67160 Types and classifications. (1) **Contains explosive substance.** Water-gel and emulsion explosive materials that contain a substance classified as an explosive must be classified as an explosive.

(2) **Contains no explosive substance.** Water-gel and emulsion explosive materials that do not contain any substance classified as an explosive or as cap-sensitive (as defined under "blasting agent" in WAC 296-52-60130, Definitions) must be classified as an explosive.

Note: Water-gel formulas, which are tested and classified as a U.S. DOT ((~~Class B~~)) Division 1.2 or 1.3 explosives do not require bullet resistant magazines.

(3) **Contains blasting agent substance.** Water-gel and emulsion explosive materials that do not contain any substance classified as an explosive and are not cap-sensitive (as defined under "blasting agent" in WAC 296-52-60130, Definitions) must be classified as blasting agents.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-68060 Operation of vehicles transporting explosives. (1) **Authorized explosives transportation.** Explosives may only be transported by a:

- Licensed manufacturer
- Blaster
- Purchaser, seller, or their designated representative

OR

- Contract carrier for hire who complies with all requirements for transportation of hazardous materials

(2) **Driver qualifications.**

(a) Vehicles transporting explosives must be driven by a responsible licensed driver who is:

- At least twenty-one years old
- Physically fit
- Careful
- Capable
- Reliable

✎ Able to read and write the English language

✎ Not addicted to or under the influence of intoxicants, narcotics, or other dangerous drugs. (This does not apply to people taking prescription drugs and/or narcotics as directed by a physician, as long as use of the prescription drug does not endanger the worker or others.)

(b) The driver must be:

✎ Familiar with all:

– Traffic regulations

– Department of Transportation (U.S. DOT) and other state laws in the transportation of explosives and hazardous material laws

✎ Aware of:

– What they are carrying

– Safety precautions for the explosives being transported

(3) **Parking - ((~~Class A or B~~)) Division 1.1 or 1.2 explosives.** A vehicle that contains ((~~Class A or B~~)) Division 1.1 or 1.2 explosives cannot be parked:

✎ On or within five feet of the traveled portion of a public street or highway

✎ On private property, including fueling or eating facilities, without the knowledge and consent of the person. The person in charge must be aware of the hazardous materials in the vehicle

OR

✎ Within three hundred feet of a bridge, tunnel, dwelling, building, or place where people work, congregate, or assemble

Exemption: These restrictions do not apply when:
– Routine operations require the vehicle be parked for a brief period of time
– It is impractical to park the vehicle any other place

(4) **Vehicle attendance.** A vehicle transporting any quantity of ((~~Class A or B~~)) Division 1.1 or 1.2 explosives must be attended at all times by a driver or other representative of the vehicle carrier, exceptions are:

✎ A vehicle containing explosive materials may be left unattended for a period not to exceed forty-eight hours provided:

– The vehicle is parked in a designated parking lot, which complies with NFPA Std. 498 and the appropriate distance table for the type and quantity of explosives.

✎ The parking lot must:

– Be correctly bermed, walled, or fenced, and gated to prevent unauthorized entry

– Be inspected and approved by the department

– Provide a full-time, continuous security patrol when explosives are present

✎ An explosives delivery truck does not need to be attended when it only contains ((~~International Class 1.5 D blasting agents~~)) Division 1.5 and no high explosives, provided the:

– Vehicle is locked so it cannot be moved

– Cargo compartments are locked to prevent theft

– Vehicle is parked according to all applicable storage distance requirements

– Vehicle is located in a secured area that restricts entry of unauthorized personnel

((~~(6)~~)) (5) **Attendant.**

(a) An authorized attendant must be physically present and able to see the explosives at all times.

(b) In an emergency, the attendant must be able to quickly get to the explosives without interference.

(c) The attendant must:

- Be awake
- Be alert
- Not be engaged in activities, which could divert their attention
- Be aware of the ((~~class~~)) division of the explosive material and its dangers
- Be instructed in the methods and procedures used to protect the public
- Be familiar with the particular vehicle being driven
- Be trained in the use of the vehicle
- Have authorization and be able to move the vehicle if required

((~~(7)~~)) (6) **Loading precautions.** A vehicle must comply with U.S. DOT loading regulations in order to transport explosives in the same vehicle body with the following items:

- Spark producing metal
- Spark producing tools
- Oils
- Matches
- Firearms
- Electric storage batteries
- Flammable substances
- Acids
- Oxidizing materials

OR

- Corrosive compounds

((~~(8)~~)) (7) **Congested areas.** Vehicles transporting explosives must avoid congested areas and heavy traffic.

((~~(9)~~)) (8) **Disabled vehicles.**

- A qualified person must be present before explosives can be transferred from a disabled vehicle to another vehicle
- If a vehicle becomes disabled in a congested area, you must promptly notify local fire and police authorities. In a remote area they may be notified if necessary.

((~~(10)~~)) (9) **Explosives delivery and issue.** Delivery and issue of explosives must be made:

- Only by and to authorized people
- Into authorized magazines or authorized temporary storage or handling areas.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-69010 Explosives. All ((~~Class A, B, and C~~)) Division 1.1, 1.2, 1.3, and 1.4 explosives, special industrial explosives, and any newly developed unclassified explosives, must be kept in magazines that meet the requirements of RCW 70.74.120 and this chapter, unless the explosives are:

- In the manufacturing process
- Being physically handled
- Being used at the blast site

OR

- Being transported to a place of storage or use.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-69015 Exempt explosives. Explosives exempt from these storage requirements are:

Type of Explosive	**Exempted Amount**
Stocks of: - Small arms ammunition, - Propellant-actuated power cartridges, and - Small arms ammunition primers	Quantities less than 750,000
Smokeless ((~~propellants~~)) powder	Quantities less than 150 pounds
Black powder (as used in muzzleloading firearms)	Quantities less than 5 pounds
Explosive-actuated power devices	Quantities less than 50 pounds net weight of explosives
Fuse lighters and igniters	(not applicable)
Safety fuses (except cordeau detonant fuses)	(not applicable)

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-69095 Ammonium nitrate. (1) **Storage.**

(a) Ammonium nitrate storage requirements do not apply to:

✎ The transportation of ammonium nitrates while under the jurisdiction of and in compliance with U.S. DOT regulations (see 49 CFR, Part 173)

✎ The storage of ammonium nitrates while under the jurisdiction of and in compliance with U.S. Coast Guard (see 49 CFR, Parts 146-149)

✎ The storage of ammonium nitrate and ammonium nitrate mixtures, which are more sensitive than allowed by the bulletin

"Definition and test procedures for ammonium nitrate fertilizers" from the Fertilizer Institute 501 2nd St. NE, Washington, DC 20006.

This definition limits the contents of organic materials, metals, sulfur, etc., in products that may be classified ammonium nitrate fertilizer.

✎ The production of ammonium nitrate or the storage of ammonium nitrate on the premises of the producing plant, if no hazards are created to the employees or public

✎ The standards for ammonium nitrate (nitrous oxide grade) that are found in the:

"Specifications, properties and recommendations for packaging, transportation, storage and use of ammonium nitrate," from the Compressed Gas Association, Inc., 1235 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4100.

(b) Ammonium nitrate storage requirements apply to:

✎ Anyone, in addition to the owner or lessee of any building, premises, or structure having or storing ammonium nitrate in quantities of one thousand pounds (425 kg) or more

✎ Ammonium nitrate in the form of crystals, flakes, grains, or prills including fertilizer grade, dynamite grade, nitrous oxide grade, technical grade, and other mixtures containing sixty percent or more ammonium nitrate by weight

Note: The approval of large quantity storage is based on the fire and explosion hazards, including exposure to toxic vapors from burning or decomposing ammonium nitrate.

(c) Storage buildings housing ammonium nitrate must:

✎ Have adequate ventilation or be self-ventilating in the event of a fire

✎ Have fire resistant walls when the exposed side of a storage building is within fifty feet (15.2 m) of a combustible building, forest, piles of combustible materials, and similar

exposure hazards. Other suitable means of exposure protection such as a freestanding wall may be used instead of a fire resistant wall

✎ Have roof coverings that are ((~~Class C~~)) Division 1.4 or better as defined in Roof Coverings, NFPA 203M-1970

✎ Have flooring of noncombustible material or be protected against saturation by ammonium nitrate. In case of fire, the floor must not have open drains, traps, tunnels, pits, or pockets into which molten ammonium nitrate could flow and be confined

✎ Be dry and free from water seepage through the roof, walls, and floors

✎ Not have basements, unless the basements are open on at least one side

✎ Not be over one story in height

Note: The continued use of an existing storage building or structure may be approved in cases where continued use will not constitute a hazard to life or adjoining property.

Bags, drums, and other containers of ammonium nitrate must:

(d) Comply with specifications and standards required for use in interstate commerce (see 49 CFR, Chapter 1). Containers used on the premises in the actual manufacturing or processing do not need to comply.

✎ Not be used for storage when the temperature of the ammonium nitrate exceeds 130☜F (54.4☜C)

✎ Not be stored within thirty inches (76 cm) of the storage building walls and partitions

✎ Not be stacked higher than twenty feet (6.1 m) in height, twenty feet (6.1 m) in width, and fifty feet (15.2 m) in length. When buildings are constructed of noncombustible materials or protected by automatic sprinklers, there are no stacking height restrictions

✎ Never be stacked closer than thirty-six inches (.09 m) below the roof or overhead supporting and spreader beams

✎ Be separated by aisles a minimum of 3 feet wide. There must be one main aisle in the storage area a minimum of four feet (1.2 m) wide

(e) Bulk ammonium nitrate must be stored:

✎ In warehouses with adequate ventilation or be capable of adequate ventilation in case of fire

✎ In structures that are not more than forty feet (12.2 m) high, unless:

– They are constructed of noncombustible material

OR

– Have adequate facilities for fighting a roof fire

✎ In clean bins that are free of materials that could cause contamination

✎ In bins or piles that are clearly identified by signs reading "AMMONIUM NITRATE" in letters a minimum of two inches (5 cm)

high

✎ In bins or piles sized and arranged so all material is moved periodically to minimize the possibility of caking

✎ Adequately separated from easily combustible fuels. Bins cannot be made of galvanized iron, copper, lead, and zinc because of the:

– Corrosive and reactive properties of ammonium nitrate

AND

– To avoid contamination

✎ In tightly constructed wooden and aluminum bins that are protected against saturation from ammonium nitrate

✎ In tightly constructed partitions that divide the ammonium nitrate from other products to avoid contamination

✎ Where the temperature of the product does not exceed 130☜F (54.4☜C)

✎ No higher than thirty-six inches (0.9 m) below the roof or overhead supporting and spreader beams if stacked in piles. Stack limits (height and depth), should be determined by the pressure setting tendency of the product

(f) Bulk ammonium nitrate when caked, cannot be broken up or loosed by the use of dynamite, other explosives or blasting agents.

(g) Bulk ammonium nitrate cannot be stored with:

✎ LP Gas on the premises except when such storage complies with WAC 296-24-475, Storage and handling of liquefied petroleum gases

✎ Sulfur and finely divided metals in the same building except when such storage complies with this chapter and NFPA standard 495, Explosives Materials Code

✎ Explosives and blasting agents in the same building except on the premises of manufacturers, distributors, and user of explosives or blasting agents

✎ When explosives or blasting agents are stored in separate buildings, other than on the approval of manufacturers, distributors, and user, they must be separated from the ammonium nitrate by the distances and/or barricades specified in Table H-22 or a minimum of fifty feet (15.2 m)

✎ With flammable liquids, such as gasoline, kerosene, solvents, and light fuel oils on the premises except when such storage conforms to WAC 296-24-330, Flammable and combustible liquids, and when walls, sills or curbs are provided in accordance with WAC 296-52-69095, Ammonium nitrate

(2) Contaminants must be stored in a separate building from ammonium nitrate

OR

Be separated by an approved firewall of not less that one-hour fire resistance rating which should extend to the underside of the roof. Alternatively, the contaminants may be separated

by a minimum of thirty feet (9.1 m), instead of using walls. These contaminants are:

- Organic chemicals
- Acids
- Other corrosive materials
- Materials that may require blasting during processing or handling
- Compressed flammable gases
- Flammable and combustible materials
- Other substances including:

Animal fats	Baled cotton	Baled rags	Baled scrap paper
Bleaching powder	Burlap or cotton bags	Caustic soda	Coal
Coke	Charcoal	Cork	Camphor
Excelsior	Fibers of any kind	Fish oil	Fish meal
Foam rubber	Hay	Lubricating oil	Linseed oil
Other oxidizable or drying oils	Naphthalene	Oakum	Oiled clothing
Oiled paper	Oiled textiles	Paint	Straw
Sawdust	Wood shavings	Vegetable oil	

(3) Housekeeping requirements must have:

- Electrical installations, which meet the requirements of chapter 296-24 WAC, Part L, Electrical, and WAC 296-800-280, Basic electrical rules, for ordinary locations and be designed to minimize damage from corrosion
- Adequate lightning protections in areas where lightning storms are prevalent (see NFPA 78-1992, Lightning Protection Code)
- Procedures to prevent unauthorized personnel from entering the ammonium nitrate storage area

(4) Fire protection must provide:

- Water supplies and fire hydrants
- Suitable fire control devices, such as a small hose or portable fire extinguishers, throughout the warehouse and in the loading/unloading areas. These devices must comply with the requirements of WAC 296-800-300, Portable fire extinguishers, and WAC 296-24-602, Standpipe and hose systems
- Approved sprinkler systems installed according to WAC 296-24-607, Automatic sprinkler systems
- Two thousand five hundred tons (two thousand two hundred seventy metric) or less of bagged ammonium nitrate may be stored in a structure that does not have an automatic sprinkler system.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-69125 Table H-24--Low explosives. (1) Use Table H-24 for: Magazines that are restricted to:

- ((~~Class B~~)) Division 1.2 or 1.3
- ((~~Class C (Division 1.3 or 1.4)~~)) Division 1.4, low explosives
- Low explosives classified by BATF

(2) Detonators cannot be stored with low explosives.

Table H-24

TABLE OF DISTANCES FOR STORAGE OF LOW EXPLOSIVES

Pounds		From inhabited building distance (feet)	From public railroad and highway distance (feet)	From above ground magazine (feet)
Over	Not Over			
0	1,000	75	75	50
1,000	5,000	115	115	75
5,000	10,000	150	150	100
10,000	20,000	190	190	125
20,000	30,000	215	215	145
30,000	40,000	235	235	155
40,000	50,000	250	250	165
50,000	60,000	260	260	175
60,000	70,000	270	270	185
70,000	80,000	280	280	190
80,000	90,000	295	295	195
90,000	100,000	300	300	200
100,000	200,000	375	375	250
200,000	300,000	450	450	300

NEW SECTION

WAC 296-52-69130 Table of distances for the storage of display fireworks (except bulk salutes).

Net weight of fireworks (pounds)	Distance between magazine and inhabited building, passenger railway, or public highway (feet)	Distance between magazine (feet)
0-1,000	150	100
1,001-5,000	230	150
5,001-10,000	300	200
Above 10,000	Use Table H-20	

Note 1: The net weight is the weight of all pyrotechnic compositions, and explosive materials and fuse only.
Note 2: For the purposes of applying this table, the term magazine also includes fireworks shipping buildings for display fireworks.
Note 3: For fireworks storage magazines in use prior to (2000) the distances in this table may be halved if properly barricaded between the magazine and potential receptor sites.
Note 4: This table does not apply to the storage of bulk salutes. Use Table H-20 for storage of bulk salutes.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-70010 Building construction for Class 1 magazines. All building-type storage facilities must:

- Be constructed of masonry, wood, metal, or a combination of these materials
- Have no openings except for entrances and ventilation
- Have the ground around the facility slope away for drainage

(1) **Wall construction.**

(a) **Masonry wall construction.** Masonry wall construction must:

- Consist of brick, concrete, tile, cement block, or cinder block
- Be at least ((~~six~~)) eight inches thick

(b) **Hollow masonry construction.** Hollow masonry construction must:

- Have all hollow spaces filled with well tamped coarse dry sand

OR

- Have weak concrete (a mixture of one part cement to eight parts sand with enough water to dampen the mixture) while tamping in place

AND

✎ Have interior walls covered with a nonsparking material

(c) **Fabricated metal wall construction.**

✎ Metal wall construction must be securely fastened to a metal framework and consist of one of the following types of metal:

– Sectional sheets of steel (at least number 14 gauge)

OR

– Aluminum (at least number 14 gauge)

✎ Metal wall construction must:

– Be lined with brick, solid cement blocks, and hardwood at least four inches thick or material of equivalent strength

– Have a minimum of six-inch sand fill between interior and exterior walls

– Have interior walls constructed of or covered with a nonsparking material

(d) **Wood frame wall construction.**

✎ Exterior wood walls must be covered with iron or aluminum at least number 26 gauge

✎ Inner walls, made of nonsparking materials must be constructed with a space:

– A minimum of six inches between the outer and inner walls

AND

– Filled with coarse dry sand or weak concrete

(2) **Floors.** Floors must be:

(a) Constructed of a nonsparking material.

(b) Strong enough to hold the weight of the maximum quantity to be stored.

(3) **Foundation.**

✎ Foundations must be constructed of brick, concrete, cement block, stone, or wood posts

✎ If piers or posts are used instead of a continuous foundation, the space under the building must be enclosed with metal

(4) **Roof.**

(a) Roofs must be covered with no less than number 26 gauge iron or aluminum fastened to a 7/8-inch sheathing, except for buildings with fabricated metal roofs.

(b) If it is possible for a bullet to be fired directly through the roof at such an angle that it would strike a point below the top of the inner walls, storage facilities must be protected by one of the following two methods:

✎ A sand tray must be:

– Located at the top of the inner wall covering the entire ceiling area, except the area necessary for ventilation.

– Lined with a layer of building paper.

– Filled with at least four inches of coarse dry sand.

✎ A fabricated metal roof must be constructed of 3/16-inch

plate steel lined with four inches of hardwood or material of equivalent strength. For each additional 1/16-inch of plate steel, the hardwood or material of equivalent strength lining may be decreased one inch.

(5) **Doors and hinges.**

(a) All doors must be constructed of 1/4-inch plate steel and lined with two inches of hardwood or material of equivalent strength.

(b) Hinges and hasps must be installed so they cannot be removed when the doors are closed and locked by:

- Welding
- Riveting

OR

- Bolting nuts on the inside of the door

(6) **Locks.**

(a) Each door must be equipped with:

- Two mortise locks
- Two padlocks fastened in separate hasps and staples
- A combination of a mortise lock and a padlock
- A mortise lock that requires two keys to open

OR

- A three-point lock

(b) Padlocks must:

- Have a minimum of five tumblers
- Have a case hardened shackle at least 3/8 inches in diameter
- Be protected with a minimum of 1/4-inch steel hoods, constructed to prevent sawing or lever action on the locks, hasps, and staples

Note: These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be operated from the outside.

(7) **Ventilation.**

- A two-inch air space must be left around ceilings and the perimeter of floors, except in doorways
- Foundation ventilators must be at least four inches by six inches
- Vents in the foundation, roof, or gables must be screened and offset

(8) **Exposed metal.**

- Sparking metal construction cannot be exposed below the tops of walls in storage facilities
- All nails must be blind nailed, countersunk, or nonsparking.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-710 Exemptions. These rules do not apply to in process storage and intraplant transportation during the manufacture of small arms ammunition, small arms primers, and smokeless ((~~propellants~~)) powder.

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-71020 Storage with ((~~Class A or B~~)) Division 1.1, 1.2, or 1.3 explosives. Small arms ammunition cannot be stored with ((~~Class A or Class B~~)) Division 1.1, 1.2, or 1.3 explosives. Unless the storage facility is adequate for ((~~Class A or Class B~~)) Division 1.1, 1.2, or 1.3 storage, small arms ammunition cannot be stored there.

SMALL ARMS SMOKELESS ((~~PROPELLANTS~~)) POWDER

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-71040 Shipping container.

✎ Small arms smokeless ((~~propellants (Class B)~~)) powder (Division 1.2 or 1.3) must be packed, stored, and transported in U.S. DOT approved shipping containers.

✎ All smokeless ((~~propellants~~)) powder must be stored in shipping containers made for smokeless ((~~propellants~~)) powder (as required by 49 CFR 173.93).

AMENDATORY SECTION (Amending WSR 02-03-125, filed 1/23/02, effective 3/1/02)

WAC 296-52-71045 Storage. (1) **Private residence or car.**

✎ Twenty-five pounds or less of small arms smokeless ((~~propellants~~)) powder, no restrictions

✎ Twenty-five to fifty pounds of small arms smokeless ((~~propellants~~)) powder, they must be stored in a strong box or cabinet constructed of a minimum of 3/4-inch plywood or equivalent material, on all sides, top, and bottom

(2) **Commercial stocks.**

✎ Over twenty pounds but not more than one hundred pounds of small arms smokeless ((~~propellants~~)) powder must be stored in portable wooden boxes with a minimum of one-inch thick walls

✎ Small arms smokeless ((~~propellants~~)) powder not exceeding one hundred fifty pounds, must be stored in a nonportable storage cabinet with a minimum of one-inch thick wood walls

(3) **Dealer's warehouse.**

✎ A dealer's warehouse cannot hold more then one hundred fifty pounds of small arms smokeless ((~~propellants~~)) powder

✎ Twenty to one hundred pounds of small arms smokeless ((~~propellants~~)) powder must be stored in a minimum of one-inch thick portable or fixed wooden boxes

(4) **Dealer's display.**

✎ The dealer's display cannot exceed more then seventy-five pounds of small arms smokeless ((~~propellants~~)) powder

✎ Small arms smokeless ((~~propellants~~)) powder must be stored in one-pound containers

(5) **Magazines.** Small arms smokeless ((~~propellants~~)) powder that exceed one hundred fifty pounds must be stored in approved licensed magazines. See Storage licensing, WAC 296-52-660, Storage of explosive materials, WAC 296-52-690, and Magazine construction, WAC 296-52-700.